

## ***Strategic Goal: Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response***

America's wastes will be stored, treated, and disposed of in ways that prevent harm to people and to the natural environment. EPA will work to clean up previously polluted sites, restoring them to uses appropriate for surrounding communities, and respond to and prevent waste-related or industrial accidents.

### **BACKGROUND AND CONTEXT**

Improper waste management and disposal threatens the health of people, endangers wildlife, and harms vegetation and natural resources. Uncontrolled hazardous and toxic substances, including radioactive waste, often migrate to ground water, surface water, and air. Consequently, they

affect streams, lakes, rivers, and water supplies. Toxins bioaccumulate in fish or accumulate in sediments. In 1999, EPA will promote safe waste storage, treatment, and disposal, clean up active and inactive waste disposal sites, and prevent the creation of new waste sites.

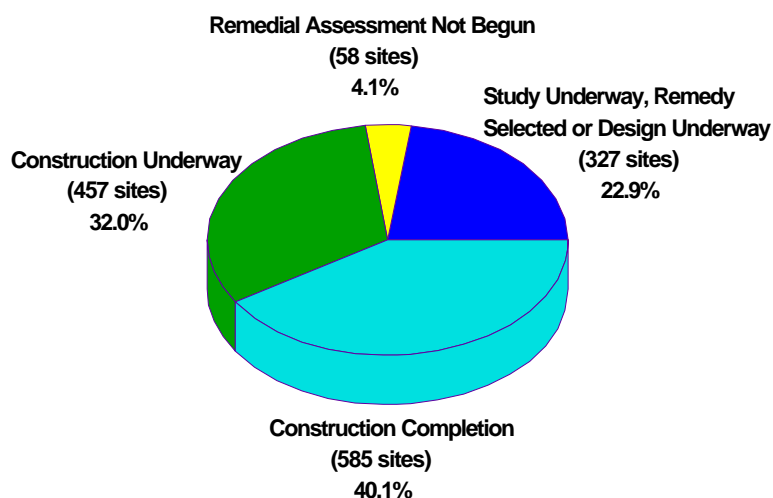
### **MEANS AND STRATEGY**

A principal objective of this goal is to reduce or control the risks posed to human health and the environment through better waste management and restoration of abandoned waste sites. In

partnership with states, tribal governments, the public, and other stakeholders, EPA will reduce or control the risks to human health and the environment at thousands of Superfund, Brownfield, Resource Conservation and Recovery Act (RCRA), and underground storage tank (UST) sites.

#### **National Priorities List Status**

(End of FY 1998)



To achieve this goal, EPA strives to apply the fastest, most effective waste management and cleanup methods available, while involving affected communities in the decision making process.

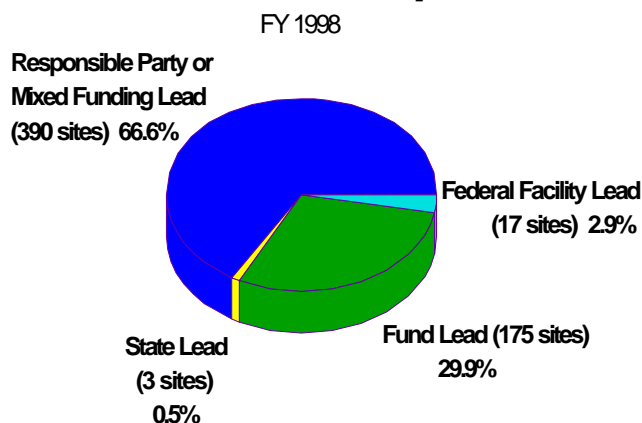
Effective use of research and enforcement strategies will also allow the Agency to further reduce the risks from exposures to hazardous waste. For more information about these programs refer to the following home pages: <http://www.epa.gov/swerrims> and <http://www.epa.gov/oeca/hazsol.html>

Another principal objective of this goal is to prevent, reduce, and respond to

releases, spills, accidents or emergencies. Through the UST, RCRA, and Oil programs, the Agency and its partners manage the practices of thousands of facilities to prevent dangerous releases to the environment. When releases do occur, EPA and its partners will have the capabilities to successfully respond.

Goal 5 has been restructured by combining the original objectives 2 and 3 of the Strategic Plan into this objective. More information on these programs can be found at the home page: <http://www.epa.gov/osw>

## Lead Party At The Time Of Construction Completion



## Research

Research efforts will continue to focus on ground water and soils research, which seeks to understand the process that governs contaminant transport and fate to improve remediation and monitoring technologies, especially their cost-effectiveness.

The principle areas of concentration are exposure to soil and ground water contaminants, assessment of the risks posed by these contaminants, cost-effective management of these risks, and the development of innovative technologies to characterize and remediate contaminated sites. Work will also continue under active waste management and combustion facilities.

Through the development of new and improved methods and models to assess exposure and effects, this research will provide the fundamental science and modeling backbone needed to conduct truly multimedia, multi-pathway exposure modeling and risk assessment.

Greater information about research and development activities can be found at the following Internet address:

<http://www.epa.gov/ordntrnt/ord>

## STATUTORY AUTHORITY

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986
- CERCLA (42 U.S.C. 9601-9675)
- CERCLA, as amended, 42 U.S.C.A. Section 9660
- CERCLA Section 104 (a)
- CERCLA Section 104 (b)
- CERCLA Section 104 (b)(1)
- CERCLA Section 104 (d)(1)
- CERCLA Section 111 (a)(1)
- CERCLA Section 311 (c), 42 U.S.C. 9660
- CERCLA Section 311 (b)(9)(A)
- CERCLA Section 311 (b)(3)
- Title III (Emergency Planning and Community Right-to-Know Act) of CERCLA, as amended by Superfund Amendments and Reauthorization Act (SARA) of 1986.
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), section 104.
- Solid Waste Disposal Act as amended by Hazardous and Solid Waste Amendments of 1984
- Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C.A. Section 6981.
- RCRA, as amended, 42 U.S.C.A. Section 6981
- The 1984 Hazardous and Solid Waste Amendment to RCRA
- OPA 33 U.S.C.A. Section 276
- Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)
- Subtitle I of the Hazardous and Solid Waste Amendments of 1984 to the Solid Waste Disposal Act. The regulated substances are liquid petroleum products and substances defined as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended under the Resource Conservation and Recovery Act of 1976.
- Clean Air Act, Section 112(r).
- Clean Air Act, 42 U.S.C.A., Section 7403.
- Clean Water Act (CWA), Section 311.
- Oil Pollution Act (OPA), 33 U.S.C. 2701-2761.
- Safe Drinking Water Act of 1974: National Primary Interim Drinking Water Regulations (1976), MCL
- Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act (Public Law 102-579 as amended by Public Law 104-201) 40 CFR 194: Criteria for the Certification and Recertification of the WIPPs
- Atomic Energy Act of 1954, as amended, 42 USC 2011 et seq. (1970) and Reorganization Plan No. 3 of 1970
- Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (an amendment to the Atomic Energy Act), 42 USC 7901 et seq (1978)
- Section 102 of the National Environmental Policy Act, 42 U.S.C. Section 4332
- The Defense Base Closure and Realignment Act of 1990, Section 2905 (a) (1) (E) (10 U.S.C. 2687 Note).

**STATUTORY AUTHORITY (CONTINUED)**

- Compliance with the Disposal Regulations (1996): Certification Decision (1998).
- Nuclear Waste Policy Act of 1982 Public Law 97-425.
- Energy Policy Act of 1992, Public Law 102-486 and Administrative Procedures Act, 5 U.S.C. 551-559, 701-706.
- Uranium Mill Tailings Radiation Control Act (UMTRCA) as amended.
- Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1998.
- Title XIV of the National Defense Authorization Act of 1996 (Nunn-Lugar II).

*Resource Summary*

(Dollars in thousands)

	<b>FY 1999 Pres. Budget</b>	<b>FY 1999 Enacted</b>
<b>Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response</b>	<b>\$2,256,934.3</b>	<b>\$1,655,913.5</b>
Reduce or Control Risks to Human Health	\$2,076,119.9	\$1,491,141.1
EPM	\$42,645.0	\$42,301.1
EPM-REIM	\$0.0	\$0.0
S&T	\$6,761.2	\$49,809.4
STAG	\$28,400.6	\$24,808.8
LUST	\$69,128.7	\$70,418.7
OIL	\$962.0	\$962.0
SF	\$1,928,222.4	\$1,302,841.1
Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies	\$180,814.4	\$164,772.4
EPM	\$111,190.9	\$93,966.8
S&T	\$9,229.4	\$8,797.6
S&T-REIM	\$0.0	\$0.0
STAG	\$36,126.6	\$38,038.4
OIL	\$15,818.2	\$13,496.9
SF	\$8,449.3	\$10,472.7
Total Workyears:	4,304.8	4,316.9

## Strategic Objective: Reduce or Control Risks to Human Health

### *Key Programs*

(Dollars in thousands)

	<b>1999 Pres Bud</b>	<b>1999 Enacted</b>
RCRA Corrective Action	\$22,871	\$18,167
RCRA State Grants	\$28,401	\$24,809
Federal Preparedness	\$1,500	\$1,500
Leaking Underground Storage Tanks (LUST) Cooperative Agreements	\$57,700	\$59,883
Superfund Remedial Actions	\$1,056,615	\$588,190
Superfund Removal Actions	\$328,434	\$199,419
Federal Facilities	\$28,642	\$28,642
Assessments	\$92,720	\$87,739
Brownfields	\$90,882	\$89,606
ATSDR Superfund Support	\$64,000	\$76,000
NIEHS Superfund Support	\$48,527	\$60,000
Other Federal Agency Superfund Support	\$10,492	\$10,000
EMPACT	\$921.7	\$398
Superfund - Maximize PRP Involvement (including reforms)	\$96,267	\$91,042
Superfund - Cost Recovery	\$30,494	\$30,494
Superfund - Justice Support	\$29,664	\$29,000
Research: Hazardous Substance Research: Hazardous Substance Research Centers	\$1,094	\$1,067
Research: Hazardous Substance Research: Superfund Innovative Technology Evaluation (SITE)	\$7,683	\$7,663
Common Sense Initiative	\$0	\$136

## *Annual Performance Goals and Measures*

### **COST RECOVERY**

**By 1999:** Address cost recovery at all National Priority List (NPL) and non-NPL sites with a statute of limitations on total past costs equal to or greater than \$200,000.

#### **Performance Measures:**

#### **Target:**

Address Cost Recovery at all NPL & Non-NPL sites w/tot. past costs = or > \$200K	100% Cases
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**Baseline:** In FY 97 the Agency will have addressed Cost Recovery at all NPL & Non-NPL sites with total past costs equal or greater than \$200,000.

### **PRP COMMITMENTS**

**By 1999:** Obtain PRP commitments for 70% of the work conducted at new construction starts at non-Federal facility sites on the NPL and emphasize fairness in the settlement process.

#### **Performance Measures:**

#### **Target:**

Section 106 Civil Actions	38 Agreements
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Orphan Share Offers at all eligible work settlement negotiations much obliged	100% Settlements
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De Minimis Settlements	23 Settlements
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Remedial Admin. Orders	19 Orders
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**Baseline:** In FY 97 approximately 70% of new remedial work at NPL sites (excluding Federal facilities) was initiated by private parties.

### **LUST CLEANUPS**

**By 1999:** Complete 22,000 Leaking Underground Storage Tank (LUST) cleanups.

**Performance Measures:**

LUST cleanups completed.

**Target:**

22,000 USTs

**Baseline:** EPA completed a total of 178,297 LUST cleanups through 1997.**SUPERFUND SITES CONSTRUCTION**

**By 1999:** EPA and its partners will maintain the pace of cleanups by completing construction at 85 additional Superfund sites (for a cumulative total of 670 construction completions with a target of 925 construction completions in 2002).

**Performance Measures:**

Construction completions.

**Target:**

85 completions

**Baseline:** EPA and its partners completed 585 construction completions from 1982 through 1998.**RCRA FACILITIES**

**By 1999:** 83 (for a cumulative total of 238 or 14%) of high priority RCRA facilities will have human exposures controlled and 45 (for a cumulative total of 119 or 7%) will have groundwater releases controlled.

**Performance Measures:**

High priority RCRA facilities with human exposures to toxins controlled.

**Target:**

83 facilities

High priority RCRA facilities with toxic releases to groundwater controlled.

45 facilities

**Baseline:** EPA established a baseline of 1,700 high-priority corrective action facilities in January 1999.**BROWNFIELDS SITE ASSESSMENT GRANTS**

**By 1999:** EPA will fund Brownfields site assessments in 100 more communities, thus reaching 300 communities by the end of 1999.

**Performance Measures:**

**Target:**

Cooperative agreements for site assessment.

100 agreements

**Baseline:** EPA signed a cumulative of 227 agreements for site assessments in 1998.

**RESEARCH: INNOVATIVE TECHNOLOGIES**

**By 2001:** Demonstrate and verify the performance of 18 innovative technologies by 2001, emphasizing remediation and characterization of groundwater and soils.

**Performance Measures:**

**Target:**

Delivery of the Annual SITE Program Report to Congress

30-SEP-99

**Baseline:** Development of "formal" baseline information for EPA research is currently underway.



## Strategic Objective: Prevent, Reduce and Respond to Releases, Spills, Accidents or Emergencies

### *Key Programs*

(Dollars in thousands)

	<b>1999 Pres Bud</b>	<b>1999 Enacted</b>
RCRA Permitting	\$11,931	\$10,332
RCRA State Grants	\$25,582	\$27,494
Waste Combustion	\$8,003	\$7,347
Accident Safety/Prevention	\$1,010	\$0
Risk Management Plans	\$11,871	\$7,258
Federal Preparedness	\$8,037	\$9,560
Community Right to Know (Title III)	\$5,351	\$4,684
Underground Storage Tanks (UST)	\$6,701	\$6,078
UST State Grants	\$10,545	\$10,545
Oil Spills Preparedness, Prevention and Response	\$14,183	\$11,988
Project XL	\$110	\$113
Common Sense Initiative	\$177	\$130
Civil Enforcement	\$1,271	\$1,234
Compliance Assistance and Centers	\$0	\$275
Research: Hazardous Waste Research	\$7,051	\$6,619

## *Annual Performance Goals and Measures*

### **SPILL PREVENTION, CONTROL AND COUNTERMEASURE**

**By 1999:** 190 additional facilities will be in compliance with spill prevention, control and countermeasure (SPCC) provisions of the oil pollution regulations (for a cumulative total of 490 additional facilities since 1997).

**Performance Measures:**

Facilities in SPCC compliance.

**Target:**

190 facilities

**Baseline:** More than 300 facilities were in compliance in 1998.

### **WASTE MANAGEMENT FACILITIES PERMITTING**

**By 1999:** 122 hazardous waste management facilities (for a cumulative total of 61% of 3,380 RCRA facilities) will have permits or other approved controls in place.

**Performance Measures:**

RCRA hazardous waste management facilities with permits or other approved controls in place.

**Target:**

122 facilities

**Baseline:** EPA and its partners identified hazardous waste management facilities as of 1997. The baseline will be finalized in 1999.

### **RESEARCH: CUMULATIVE EXPOSURE-RISK ASSESSMENT**

**By 1999:** Complete prototype model for assessing cumulative exposure-risk assessment integrating the environmental impact of multiple chemicals through multiple media and pathways.

**Performance Measures:**

Beta version for comprehensive modeling system.

**Target:**

30-SEP-99

HWIR Human and Ecosystems Site (Generic) Exposure-Risk Assessment Screening Model, 30-SEP-99 peer reviewed and applied to HWIR listed chemical exit levels.

**Baseline:** Development of "formal" baseline information for EPA research is currently underway.

## **EXTERNAL FACTORS**

**T**here are a number of external factors that could substantially impact the Agency's ability to achieve the outlined objectives under this goal. The external factors include, for example, heavy reliance on state partnerships, development of new environmental technology, commitment by other federal agencies, or statutory barriers.

The Agency's ability to achieve its goals of reducing risks posed by Superfund sites and ensuring trust fund stewardship are partially dependent upon the capacity of our partners. The Agency's goals of achieving construction completions, cost recoveries, and maximizing PRP participation in clean-up efforts are heavily dependent on the progress of PRP, state or Tribal negotiations and the nature of contamination at NPL sites. In addressing Federal facilities, internal decision processes within other Federal agencies such as the Department of Defense and the Department of Energy would impact our goal of other clean up activities.

The Agency's ability to achieve its goal of reducing community risks from chemical accidents is dependent on a number of factors, including: 1) Delegating the response management plan (RMP) review program to more states in 1999 will depend upon those states enacting laws, allocating funds and developing specific capabilities that will enable

them to review and audit risk management plans; and 2) Industry's willingness to provide the strong top-down leadership to make RMP compliance a priority and commit the resources necessary to get the job done.

The Agency's ability to achieve its RCRA goals to prevent releases by proper facility management is dependent on a number of factors, including: 1) In most cases, states have received authorization (hazardous waste management program) or approval (municipal solid waste landfill permit program) and are primary implementers of these programs. As such, EPA relies heavily on states to perform many of the activities needed to achieve these targets. 2) The technology of Continuous Emissions Monitors (CEMs) could affect the ability of combustion facilities to monitor emissions and provide data in a cost-effective manner. The Agency is coordinating with ORD, DOE, and private industry in these efforts. 3) The increased flexibility provided to states to redirect resources under the National Environmental Performance Partnership System (NEPPS). If states redirect resources away from this area, it would impact both annual performance and progress implementing the Agency's strategic plan.

## VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

The Office of Underground Storage Tanks (OUST) uses the following processes to verify and validate performance measures data. Designated State agencies submit semi-annual progress reports to the EPA regional offices, who review, verify and then forward the data to the OUST Headquarters. OUST Headquarters staff examine the data and resolve any discrepancies with the regional offices. The data are displayed on a region by region basis, which allows regional staff to verify their data. OUST does not maintain a national database.

The performance results are also used in OUST's Regional Strategic Overview (RSO) process to assess the status of State progress in implementing the program. This process is based on strategic discussions that the program has with the states, regarding how to continue to improve states' performance. In the mid-year and end of year state evaluations, the Program discusses with states their efforts to update and validate their data, and to make continual improvements in their performance. EPA relies on its state partners to provide our measurement data which have been used by the UST/LUST program for 10 years.

CERCLIS is the official database used by the Agency to help track and store Superfund national site information. The Agency is taking steps to ensure that all Superfund accountability data are rigorously validated. The database is used to track, store, and report national accomplishment information. EPA has defined the various roles and responsibilities of key individuals who are responsible for development, operation and maintenance of CERCLIS.

The headquarters sponsor of CERCLIS data is responsible for (1) identifying the data elements needed, (2) defining the data elements, and (3) informing the appropriate people that the information needs to be collected and loaded into

CERCLIS. The regional person who owns and enters the data (e.g., Superfund remedial project manager) is responsible for reviewing, verifying, and validating site data in CERCLIS.

The responsibility of the Information Management Center, under the EPA's Office of Emergency and Remedial Response (OERR), is to ensure: (1) there is a data element with an accurate definition for all data; (2) the data element is accessible to searches and can be retrieved for reports; (3) the source for the data is referenced in the system; (4) the data is accurately entered or converted into the system; (5) data from other sources is considered draft until it has been checked against its source data, and is found acceptable; and (6) data integrity is maintained in all system applications and reports.

The CERCLIS database is also used to help track and store the Oil Spill Program performance data. Entry of Oil Spill Program data into CERCLIS began in 1993.

To assure data accuracy and control, the following administrative controls are in place: (1) Superfund/Oil Implementation Manual (SPIM) -- This is the program management manual which details what data must be reported; (2) Report Specifications -- Report specifications are published for each report detailing how reported data are calculated; (3) Coding Guide -- It contains technical instructions to data users such as *regional IMCs*, program personnel, report owners and data input personnel; (4) Quality Assurance (QA) Unit Testing -- Unit testing is an extensive QA check made by the report programmer to assure that its product is producing accurate data that conforms to the current specification; (5) QA Third Party Testing -- Third party testing is an extensive test made by an independent QA tester to assure that the report produces data in conformance with the report

specifications; (6) Regional CERCLIS Data Entry Internal Control Plan -- The data entry internal control plan includes: (a) regional policies and procedures for entering data into CERCLIS; (b) a review process to ensure that all Superfund accomplishments are supported by source documentation; (c) delegation of authorities for approval of data input into CERCLIS; and (d) procedures to ensure that reported accomplishments meet accomplishment definitions.

Two audits, one by the Office Inspector General (OIG) and the other by Government Accounting Office (GAO), were done this past year to assess the validity of the data in CERCLIS. The OIG audit report "Superfund Construction Completion reporting", No. E1SGF7-05-0102-8100030, was performed to verify the accuracy of the information that the Agency was providing to Congress and the public regarding the construction completion statistic.

The OIG concluded that the Agency "has good management controls to ensure the accuracy of the information that is reported. The GAO's report "Superfund: Information on the Status of Sites", GAO/RCED-98-241, also sought to review the accuracy of the information in CERCLIS on sites' cleanup progress. GAO tested the accuracy of data in the CERCLIS system for a random sample of NPL sites. On the basis of GAO's sample results, GAO "estimates that the cleanup status of NPL sites reported by the Superfund database is accurate for 95% of the sites."

In 1999, the Agency will begin to improve the Superfund program's technical information by incorporating more site remedy selection, risk, removal response, and community involvement information in CERCLIS. Also, it will begin efforts to share information among the Federal, state and tribal programs. The additional information will further enhance the Agency's efforts to efficiently identify, evaluate and remediate Superfund hazardous waste sites.

In order to validate the Brownfields performance measure data, the Outreach and Special Projects Staff utilize data input and verification of the Brownfields Management System (BMS) and the CERCLIS system. The Brownfields Management System is used to evaluate management, environmental, and economically-related results such as jobs generated and acres assessed and cleaned up. BMS uses data gathered from Brownfield pilots' quarterly reports and from the Regions. The CERCLIS system records Regional accomplishments on Brownfields Assessments. Verification relies on reviews by Regional staff responsible for pilot cooperative agreements or Brownfields cooperative agreements and contracts.

The Resource Conservation Recovery Information System (RCRIS) is the national database which supports EPA's RCRA program. RCRIS contains information on entities (generically referred to as "handlers") engaged in hazardous waste generation and management activities regulated under the portion of RCRA that provides for regulation of hazardous waste. RCRIS has several different modules, including a Corrective Action Module which tracks the status of facilities for which potential needs for corrective actions have been identified.

For validation and verification within RCRIS, controls include maintaining a high degree of consistency in data elements over time as well as data screen edits to help ensure that key data is entered for all facilities. States and Regions, who create the databases, manage data quality control. RCRIS has a suite of user and system documentation which describes the overall administration of the data collection and management activities. Training on use of the systems is provided on a regular basis, usually annually depending on the nature of system changes and user needs.

RCRA data verification procedures ensure that the data collected at the field or facility level are not

corrupted or confused before they are presented, aggregated, and analyzed at the Federal level. Environmental monitoring data will meet standard Quality Assurance/Quality Control (QA/QC) procedures for the RCRA program, as documented in the Office of Solid Waste Quality Assurance Management Plan and the Guidebook for QA/QC Procedure for Submission of Data for the LDR Program. These procedures, in part, define requirements for sampling and analysis to assure data quality.

Another common method of verification involves examination of data collected and evaluating the relationship of those data to other data collected under similar circumstances.

Because the RCRA statute provides for delegation of program implementation to the states, the majority of data for the RCRA information system (RCRIS) and the Biennial Reporting System (BRS), originates with and is received from the states. In addition the system architectures provide states with the ability to use software other than the national software managed by EPA for their data management activities provided that they supply the mandatory data to EPA in the required quality and format. The Agency consolidates data from the states which is then used to construct the national databases used for program oversight and public information.

The national RCRA software provides a range of functions to ensure data quality. Both systems employ on-line data validation checks (e.g., range limits, mandatory data entry for required elements before saving of a record) to assure data type integrity as well as batch edits (performed when data is extracted and consolidated) to enforce program rules requiring associated consistency across data components for which on-line edits are impracticable or inappropriate.

Beyond the system enforced data quality controls, states and regions who implement the program perform data validation reviews to ensure

that the data properly inventories the essential program activities and is programmatically correct. During periodic program reviews, EPA headquarters also confirms the timeliness and accuracy of key data elements which support national program status reporting. Training on use of the systems is provided on a regular basis, usually annually, depending on the nature of system changes and user needs.

The RCRA program is currently in the process of reinventing its information management needs and systems through a joint initiative with the states called WIN/INFORMED. The scope of the WIN/INFORMED project covers the activities and information currently supported by the RCRIS and BRS data systems. The RCRA program has been divided into areas for analysis and design/construction of new systems. Each analysis under WIN/INFORMED includes the identification of the data elements needed to support the implementation and management of the RCRA program; development of common, agreed upon national definitions; identification of programmatic process improvements; and tracking burden reduction. The design and construction of new systems will be based on the results of each analysis. The systems will be designed flexibly so where the program is still identifying data needed to support a program activity, that information can later be incorporated into the system after it has been fully developed by the program.

The WIN/INFORMED project is scheduled to be completed by the end of the calendar year 2002. Analysis, design and construction will occur over different times for each of the program areas. BRS information will be analyzed in the Waste Activity Monitoring (WAM) area which is scheduled to begin in June, 1999. System construction for WAM will be completed in 2001. Permitting/Corrective Action information will be analyzed in the Permitting/Corrective Action (PCA) area which is scheduled to begin in January, 2000. System construction for PCA will be completed during 2002.

Non-hazardous waste management is delegated to the states. Federal guidance is provided, but no actual federal program implementation exists. For this reason, individual states collect and verify data on waste management practices for Industrial D and municipal wastes in accordance with local needs. The Agency receives aggregate data more indirectly than in the case of hazardous waste, through reports, studies, or statistical sampling rather than a national data system.

Since states have implementation authority for MSW programs, they know best the extent of compliance within their jurisdictions. To measure progress, the Agency must rely on the ability and willingness of state regulatory programs to share this knowledge.

Measuring the number of facilities that have permits or other forms of approval issued to them directly relates to the number of facilities with approved controls in place. Approved controls means compliance with the requirements of federal regulations, Agency approved state permit program, or other system of prior approval and conditions. In 1999, emphasis will be placed on approving State programs that will lead to all MSW disposal facilities having approved controls in place.

The Chemical Emergency Preparedness and Prevention program uses the following processes and data bases to collect and validate performance data. Facilities will be required to submit information on the chemical risks in their facilities in 1999. This information will be placed in a database that will be accessible to Federal, state, and local officials, as well as the public with safeguards for sensitive information.

The information will be verified through Regional and state audits and reports. LEPCs will be contacted periodically to verify risk reduced in their community. The Emergency Release Notification System (ERNS) database will be used to confirm releases reported in RMPs.

States and LEPCs will be surveyed to determine the status of their chemical emergency preparedness and prevention programs, including the steps taken to integrate counter-terrorism planning. A Federal Emergency Management Agency (FEMA) database will be monitored to determine if all hazard plans include a counter-terrorism appendix. A database will track the status of RMP state delegated programs. Regions and headquarters will routinely enter information on the status of state RMP implementation plans, and Regions will ensure quality of the data through quarterly reviews of the states and random checks of LEPCs.

## Research

Under Objectives 1 and 2, EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Most performance measures are verifiable through quantitative means. For those measures that are output-oriented, actual outputs or products can be objectively verified. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to the validation and verification strategies is the performance of both peer and quality assurance reviews.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

A quality assurance system is implemented at all levels in the EPA research organization. The

Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental

programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.